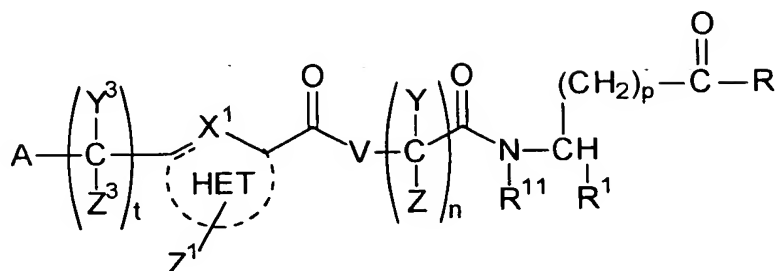
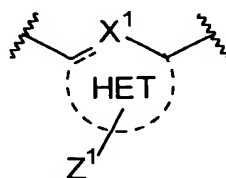


What is claimed is:

1. A compound of the formula

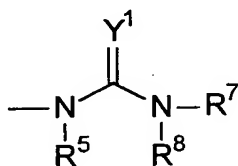


or a pharmaceutically acceptable salt thereof, wherein



is a 5-8 membered monocyclic heterocyclic ring, optionally unsaturated, containing 1 to 4 heteroatoms, selected from the group consisting of O, N or S; wherein  $X^1$  is selected from the group consisting of CH,  $CH_2$ , N, NH, O and S;

A is



wherein  $Y^1$  is selected from the group consisting of  $N-R^2$ , O, and S;

$R^2$  is selected from the group consisting of H; alkyl; aryl; hydroxy; alkoxy; cyano; nitro; amino; alkenyl; alkynyl; amido; alkylcarbonyl; arylcarbonyl; alkoxy carbonyl; aryloxy carbonyl; haloalkylcarbonyl; haloalkoxy carbonyl; alkylthiocarbonyl; arylthiocarbonyl;

acyloxymethoxycarbonyl; alkyl optionally substituted with one or more substituent selected from lower alkyl, halogen, hydroxyl, haloalkyl, cyano, nitro, carboxyl, amino, alkoxy, aryl or aryl optionally substituted with one or more halogen, haloalkyl, lower alkyl, alkoxy, cyano, alkylsulfonyl, alkylthio, nitro, carboxyl, amino, hydroxyl, sulfonic acid, sulfonamide, aryl, fused aryl, monocyclic heterocycles, or fused monocyclic heterocycles; aryl optionally substituted with one or more substituent selected from halogen, haloalkyl, hydroxy, lower alkyl, alkoxy, methylenedioxy, ethylenedioxy, cyano, nitro, alkylthio, alkylsulfonyl, sulfonic acid, sulfonamide, carboxyl derivatives, amino, aryl, fused aryl, monocyclic heterocycles and fused monocyclic heterocycle; monocyclic heterocycles; and monocyclic heterocycles optionally substituted with one or more substituent selected from halogen, haloalkyl, lower alkyl, alkoxy, amino, nitro, hydroxy, carboxyl derivatives, cyano, alkylthio, alkylsulfonyl, sulfonic acid, sulfonamide, aryl or fused aryl; or

$R^2$  taken together with  $R^7$  forms a 4-12 membered dinitrogen containing heterocycle optionally substituted with one or more substituent selected from the group consisting of lower alkyl, thioalkyl, alkylamino, hydroxy, keto, alkoxy, halo, phenyl, amino, carboxyl or carboxyl ester, spirodioxolane, and fused phenyl;

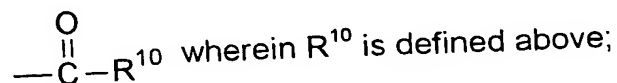
or  $R^2$  taken together with  $R^7$  forms a 4-12 membered heterocycle, optionally unsaturated, containing one or more heteroatom selected from O, N and S;

or  $R^2$  taken together with  $R^7$  forms a 5-9 membered heteroaromatic ring optionally substituted with one or more substituent selected from lower alkyl, phenyl, alkoxy and hydroxy;

or  $R^2$  taken together with  $R^7$  forms a 5 membered heteroaromatic ring fused with a aryl or heteroaryl ring;

$R^7$  (when not taken together with  $R^2$ ) and  $R^8$  are independently selected from the group consisting of H; alkyl; alkenyl; alkynyl; aralkyl; amino; alkylamino; hydroxy; alkoxy; arylamino; amido, alkylcarbonyl, arylcarbonyl; alkoxycarbonyl; aryloxy; aryloxycarbonyl; haloalkylcarbonyl; haloalkoxycarbonyl; alkylthiocarbonyl; arylthiocarbonyl; acyloxymethoxycarbonyl; cycloalkyl; bicycloalkyl; aryl; acyl; benzoyl; alkyl optionally substituted with one or more substituent selected from lower alkyl, halogen, hydroxy, haloalkyl, cyano, nitro, carboxyl derivatives, amino, alkoxy, thio, alkylthio, sulfonyl, aryl, aralkyl, aryl optionally substituted with one or more substituent selected from halogen, haloalkyl, lower alkyl, alkoxy, methylenedioxy, ethylenedioxy, alkylthio, haloalkylthio, thio, hydroxy, cyano, nitro, carboxyl derivatives, aryloxy, amido, acylamino, amino, alkylamino, dialkylamino, trifluoroalkoxy, trifluoromethyl, sulfonyl, alkylsulfonyl, haloalkylsulfonyl, sulfonic acid, sulfonamide, aryl, fused aryl, monocyclic heterocycles, fused monocyclic heterocycles; aryl optionally substituted with one or more substituent selected from halogen, haloalkyl, lower alkyl, alkoxy, methylenedioxy, ethylenedioxy, alkylthio, haloalkylthio, thio, hydroxy, cyano, nitro, carboxyl derivatives, aryloxy, amido, acylamino, amino, alkylamino, dialkylamino, trifluoroalkoxy, trifluoromethylsulfonyl, alkylsulfonyl, sulfonic acid, sulfonamide, aryl, fused aryl, monocyclic heterocycles, or fused monocyclic heterocycles; monocyclic heterocycles; monocyclic heterocycles optionally substituted with one or more substituent selected from halogen, haloalkyl, lower alkyl, alkoxy, aryloxy, amino, nitro, hydroxy, carboxyl derivatives, cyano, alkylthio, alkylsulfonyl, aryl, fused aryl; monocyclic and bicyclic heterocyclicalkyls;  $-SO_2R^{10}$  wherein  $R^{10}$  is selected from the

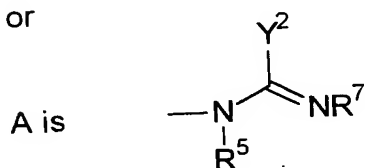
group consisting of alkyl, aryl and monocyclic heterocycles, all optionally substituted with one or more substituent selected from the group consisting of halogen, haloalkyl, alkyl, alkoxy, cyano, nitro, amino, acylamino, trifluoroalkyl, amido, alkylaminosulfonyl, alkylsulfonyl, alkylsulfonylamino, alkylamino, dialkylamino, trifluoromethylthio, trifluoroalkoxy, trifluoromethylsulfonyl, aryl, aryloxy, thio, alkylthio, and monocyclic heterocycles; and



or NR<sup>7</sup> and R<sup>8</sup> taken together form a 4-12 membered mononitrogen containing monocyclic or bicyclic ring optionally substituted with one or more substituent selected from lower alkyl, carboxyl derivatives, aryl or hydroxy and wherein said ring optionally contains a heteroatom selected from the group consisting of O, N and S;

R<sup>5</sup> is selected from the group consisting of H, alkyl, alkenyl, alkynyl, benzyl, and phenethyl;

or

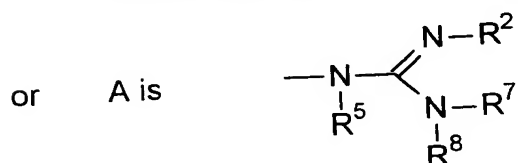


wherein Y<sup>2</sup> is selected from the group consisting of alkyl; cycloalkyl; bicycloalkyl; aryl; monocyclic heterocycles; alkyl optionally substituted with aryl which can also be optionally substituted with one or more substituent selected from halo, haloalkyl, alkyl, nitro, hydroxy, alkoxy, aryloxy, aryl, or fused aryl; aryl optionally substituted with one or more substituent selected from halo, haloalkyl, hydroxy, alkoxy, aryloxy, aryl, fused aryl, nitro, methylenedioxy, ethylenedioxy, or alkyl; alkynyl; alkenyl; -S-R<sup>9</sup> and -O-R<sup>9</sup> wherein R<sup>9</sup> is selected from the group consisting of H; alkyl;

aralkyl; aryl; alkenyl; and alkynyl; or R<sup>9</sup> taken together with R<sup>7</sup> forms a 4-12 membered mononitrogen and monosulfur or monooxygen containing heterocyclic ring optionally substituted with lower alkyl, hydroxy, keto, phenyl, carboxyl or carboxyl ester, and fused phenyl; or R<sup>9</sup> taken together with R<sup>7</sup> is thiazole; oxazole; benzoxazole; or benzothiazole; and

R<sup>5</sup> and R<sup>7</sup> are as defined above;

or Y<sup>2</sup> (when Y<sup>2</sup> is carbon) taken together with R<sup>7</sup> forms a 4-12 membered mononitrogen or dinitrogen containing ring optionally substituted with alkyl, aryl, keto or hydroxy;

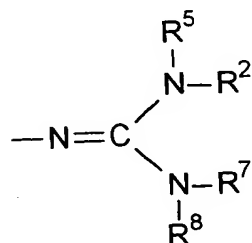


where R<sup>2</sup> and R<sup>7</sup> taken together form a 5-8 membered dinitrogen containing heterocycle optionally substituted with one or more substituent selected from the group consisting of lower alkyl, hydroxy, alkoxy, keto, phenyl, or carboxyl derivatives; and R<sup>8</sup> is selected from the group consisting of alkylcarbonyl, arylcarbonyl, alkoxy carbonyl, aryloxy carbonyl, haloalkylcarbonyl, haloalkoxy carbonyl, alkylthiocarbonyl, arylthiocarbonyl, or acyloxymethoxycarbonyl; and

R<sup>5</sup> is defined as above

or R<sup>2</sup> and R<sup>7</sup> taken together form a membered heteroaromatic ring such as imidazole or pyrimidine;

or A is



where R<sup>2</sup> and R<sup>7</sup> taken together form a 5-8 membered dinitrogen containing heterocycle optionally substituted with hydroxy, keto, phenyl, or alkyl; and

R<sup>8</sup> are both selected from the group consisting of alkylcarbonyl, arylcarbonyl, alkoxycarbonyl, aryloxy, haloalkylcarbonyl, haloalkoxycarbonyl, alkylthiocarbonyl, arylthiocarbonyl and acyloxymethoxycarbonyl;

Z<sup>1</sup> is one or more substituent selected from the group consisting of H; alkyl; hydroxy; alkoxy; aryloxy; halogen; haloalkyl; haloalkoxy; nitro; amino; alkylamino; acylamino; dialkylamino; cyano; alkylthio; alkylsulfonyl; carboxyl derivatives; trihaloacetamide; acetamide; acyl; aryl; fused aryl; cycloalkyl; thio; monocyclic heterocycles; fused monocyclic heterocycles; and A, wherein A is defined above;

V is selected from the group consisting of -N-(R<sup>6</sup>)- wherein R<sup>6</sup> is selected from the group consisting of H; lower alkyl; cycloalkyl; aralkyl; aryl; and monocyclic heterocycles; or R<sup>6</sup> taken together with Y, forms a 4-12 membered mononitrogen containing ring;

Y, Y<sup>3</sup>, Z and Z<sup>3</sup> are independently selected from the group consisting of hydrogen; alkyl; aryl; and cycloalkyl; or Y and Z taken together form a cycloalkyl; or Y<sup>3</sup> and Z<sup>3</sup> taken together form a cycloalkyl;

n is an integer 1, 2, or 3;

t is an integer 0, 1, or 2;

p is an integer 0, 1, 2, or 3;

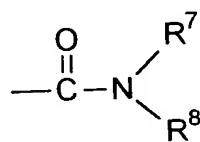
R is  $X-R^3$  wherein X is selected from the group consisting of O, S and  $NR^4$ , wherein  $R^3$  and  $R^4$  are independently selected from the group consisting of hydrogen; alkyl; alkenyl; alkynyl; haloalkyl; aryl; arylalkyl; sugars; steroids; polyalkylethers; alkylamido; alkyl N,N-dialkylamido; pivaloyloxymethyl; and in the case of the free acid, all pharmaceutically acceptable salts thereof;

$R^1$  is selected from the group consisting of hydrogen; alkyl; alkenyl; alkynyl; aryl; carboxyl derivatives; haloalkyl; cycloalkyl; monocyclic heterocycles; monocyclic heterocycles optionally substituted with alkyl, halogen, haloalkyl, cyano, hydroxy, aryl, fused aryl, nitro, alkoxy, aryloxy, alkylsulfonyl, arylsulfonyl, sulfonamide, thio, alkylthio, carboxyl derivatives, amino, amido;

alkyl optionally substituted with one or more of halo, haloalkyl, hydroxy, alkoxy, aryloxy, thio, alkylthio, alkynyl, alkenyl, alkyl, arylthio, alkylsulfoxide, alkylsulfonyl, arylsulfoxide, arylsulfonyl, cyano, nitro, amino, alkylamino, dialkylamino, alkylsulfonamide, arylsulfonamide, acylamide, carboxyl derivatives, sulfonamide, sulfonic acid, phosphonic acid derivatives, phosphinic acid derivatives, aryl, arylthio, arylsulfoxide, or arylsulfone all optionally substituted on the aryl ring with halo, alkyl, haloalkyl, cyano, nitro, hydroxy, carboxyl derivatives, alkoxy, aryloxy, amino, alkylamino, dialkylamino, amido, aryl, fused aryl, monocyclic heterocycles; and fused monocyclic heterocycles, monocyclic heterocyclicthio, monocyclic heterocyclicsulfoxide, and monocyclic heterocyclic sulfone, which can be optionally substituted with halo, haloalkyl, nitro, hydroxy, alkoxy, fused aryl, or alkyl;

alkylcarbonyl, haloalkylcarbonyl, and arylcarbonyl;

aryl optionally substituted in one or more positions with halo, haloalkyl, alkyl, alkoxy, aryloxy, methylenedioxy, ethylenedioxy, alkylthio, haloalkylthio, thio, hydroxy, cyano, nitro, acyloxy, carboxyl derivatives, carboxyalkoxy; amido, acylamino, amino, alkylamino, dialkylamino, trifluoroalkoxy, trifluoromethylsulfonyl, alkylsulfonyl, sulfonic acid, sulfonamide, aryl, fused aryl, monocyclic heterocycles and fused monocyclic heterocycles; and

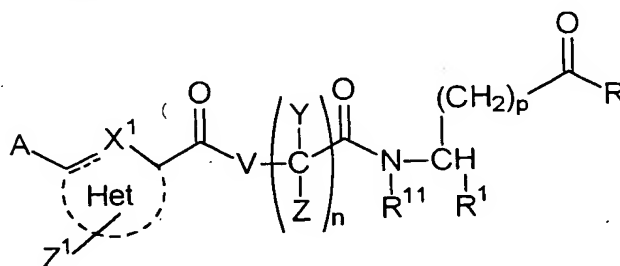


wherein  $\text{R}^7$  and  $\text{R}^8$  are as defined above and provided that taken together with the nitrogen,  $\text{R}^7$  and  $\text{R}^8$  comprise an amino acid; and

$\text{R}^{11}$  is selected from the group consisting of H, alkyl, aralkyl, alkenyl, alkynyl, haloalkyl or haloalkynyl or  $\text{R}^{11}$  taken together with Y forms a 4-12 membered mononitrogen containing ring;

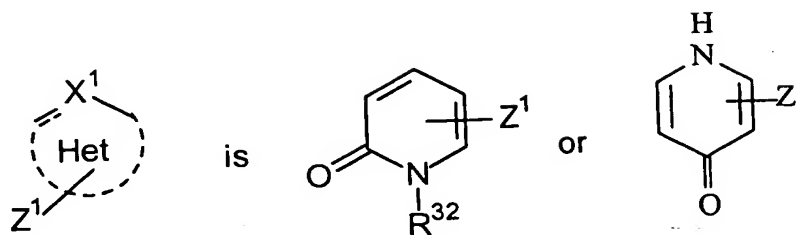
or a pharmaceutically acceptable salt thereof.

2. A compound according to Claim 1 of the formula



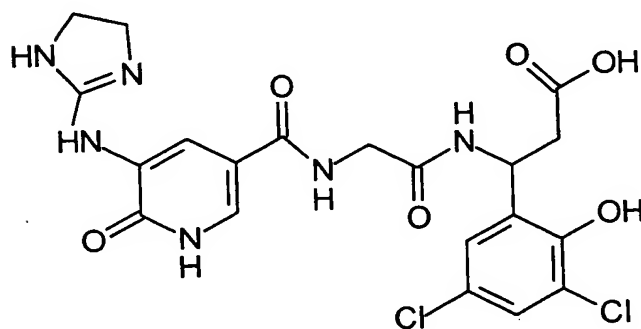
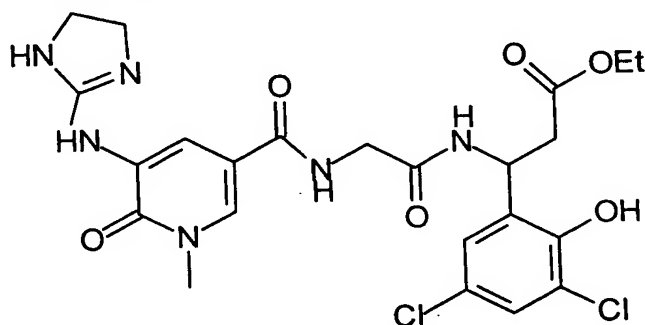
wherein

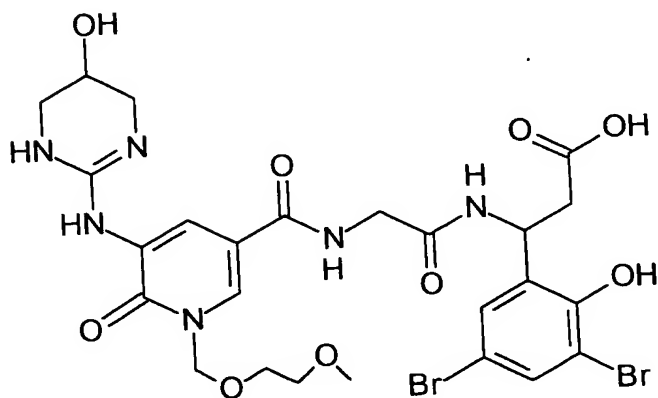
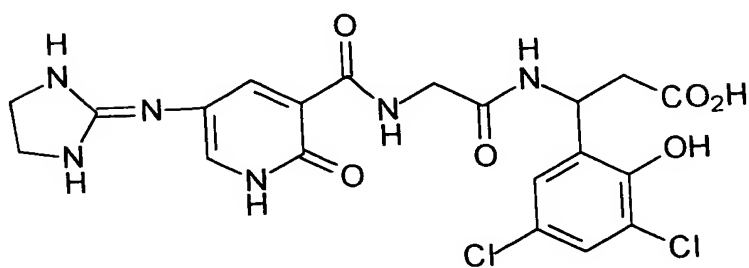
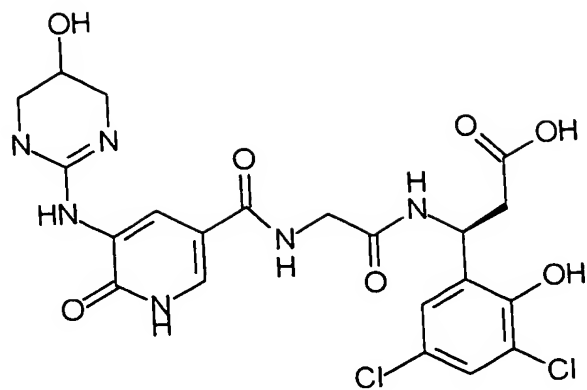


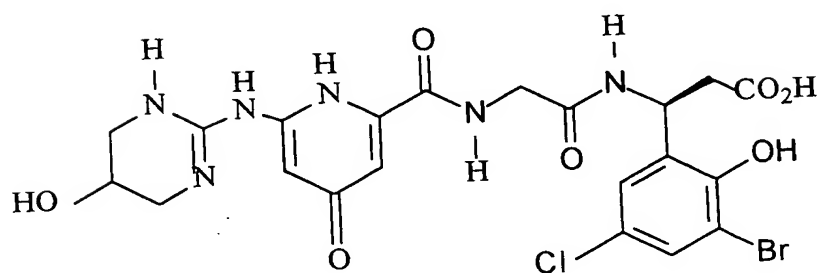
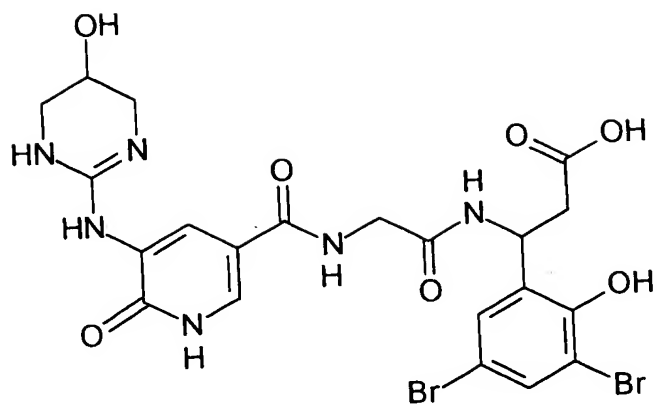


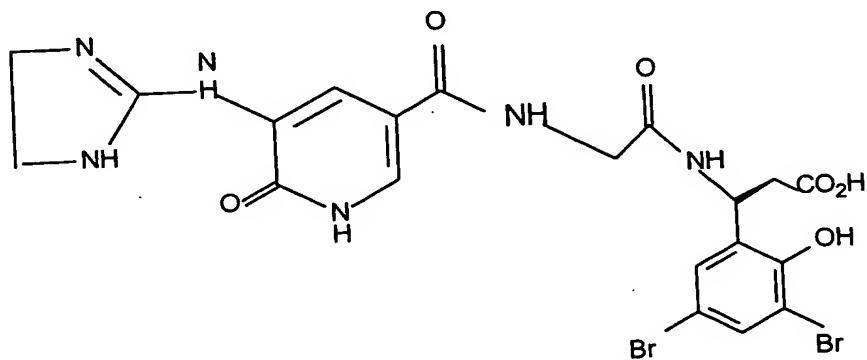
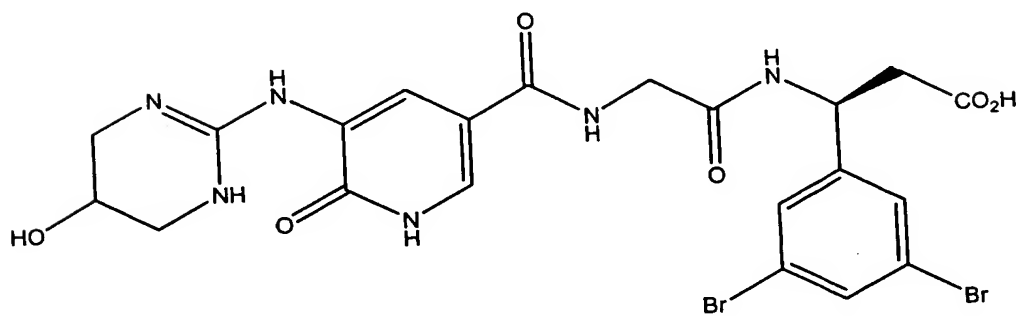
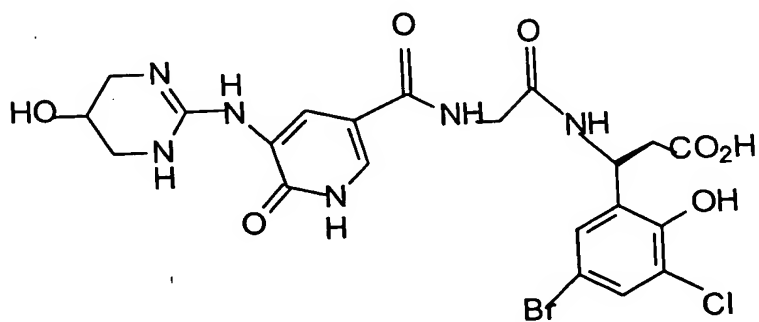
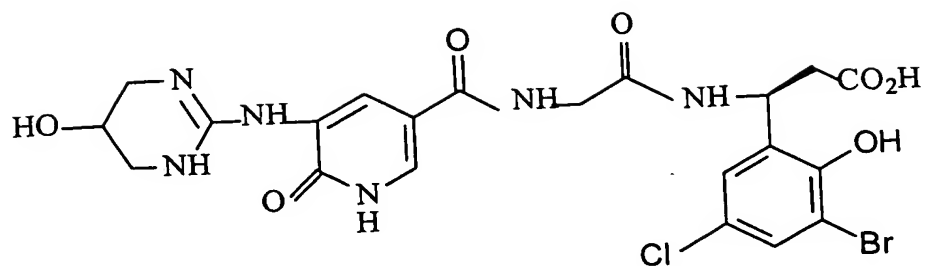
wherein  $R^{32}$  is H, alkyl, alkoxyalkyl, aminoalkyl, dialkylamino alkyl, wherein the alkyl group is optionally substituted by one or more substituent selected from the group consisting of hydroxy, alkoxy, amino, alkylamino, dialkylamino, aryl- or alkyl-sulfonyl, carboxyl, and carboxyl derivatives.

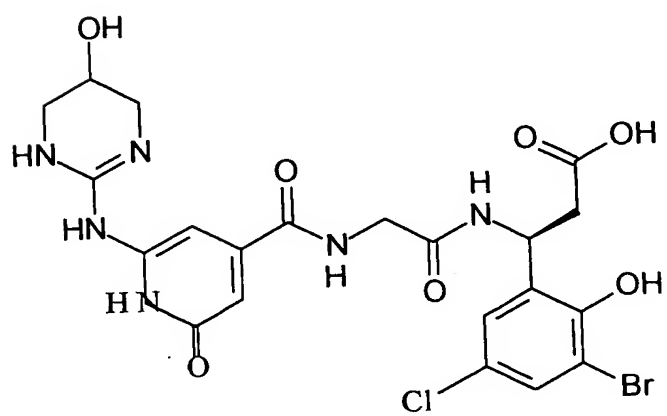
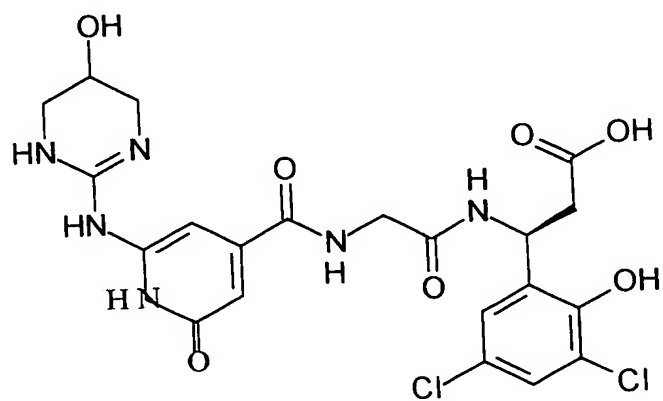
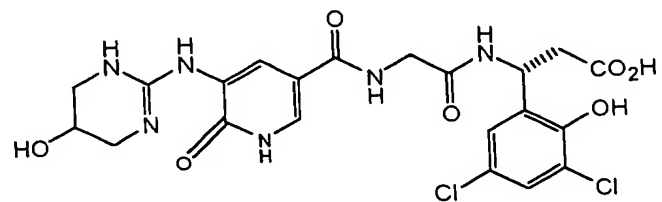
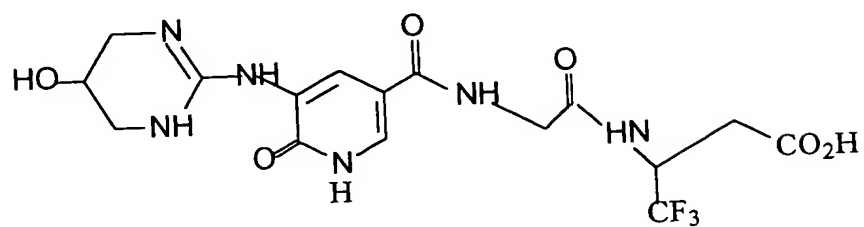
3. A compound according to Claim 2 wherein the compound is selected from the group consisting of

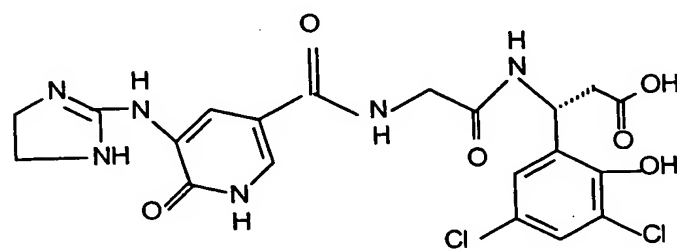
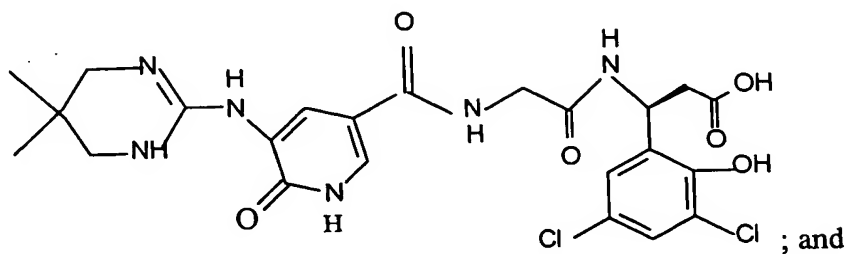
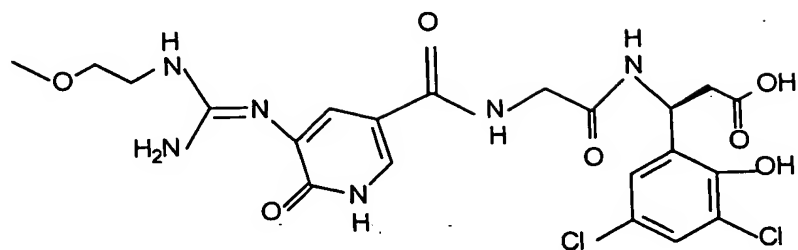




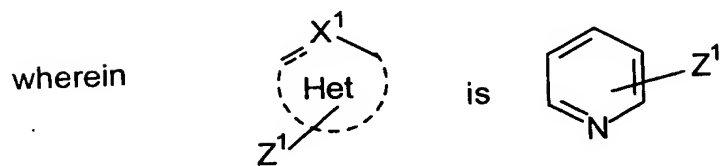
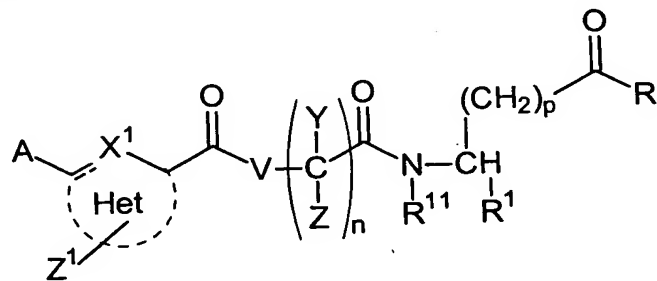




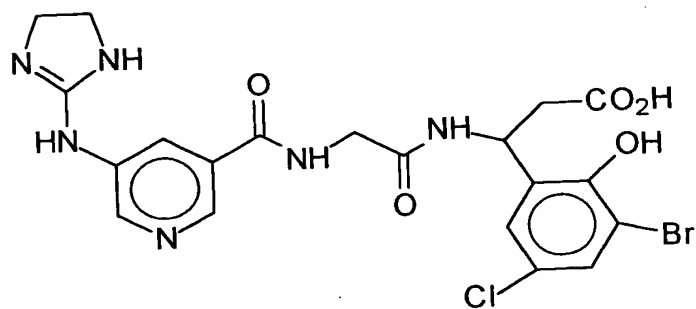
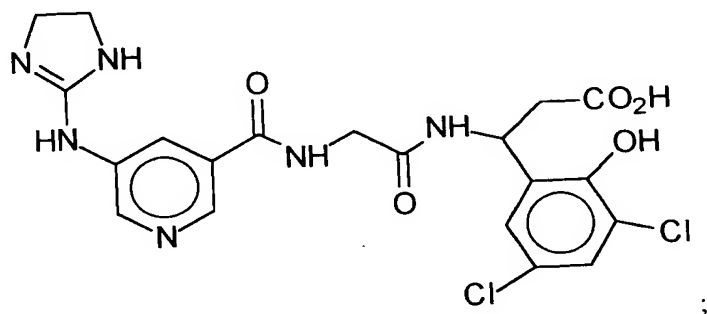
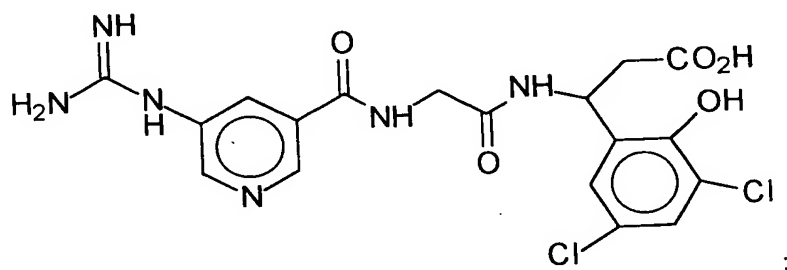
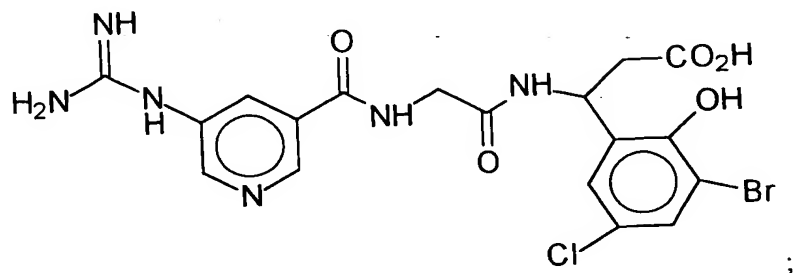


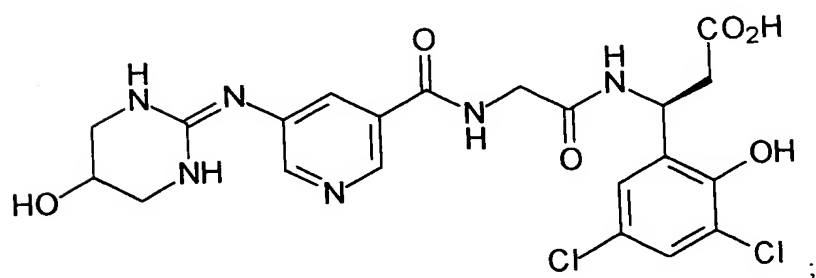
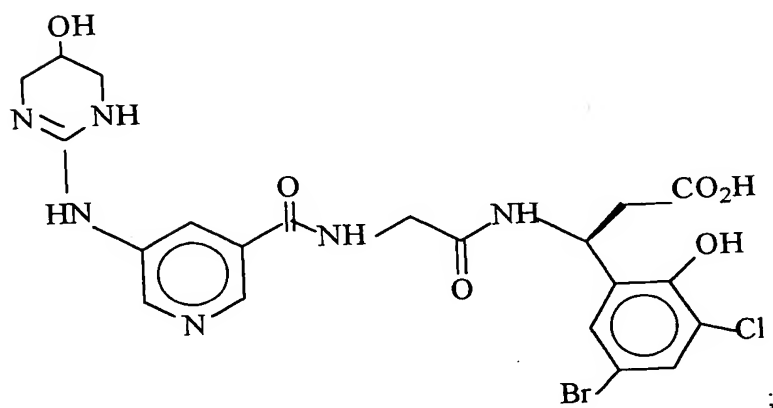
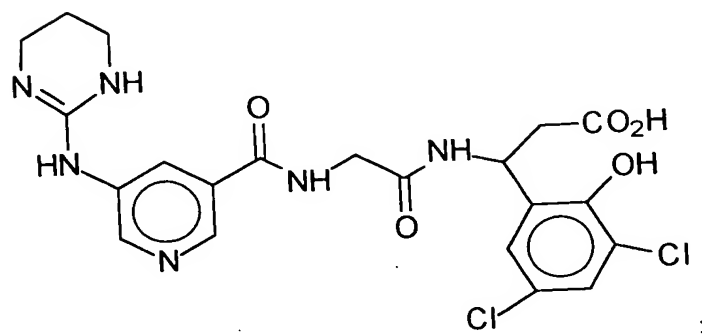
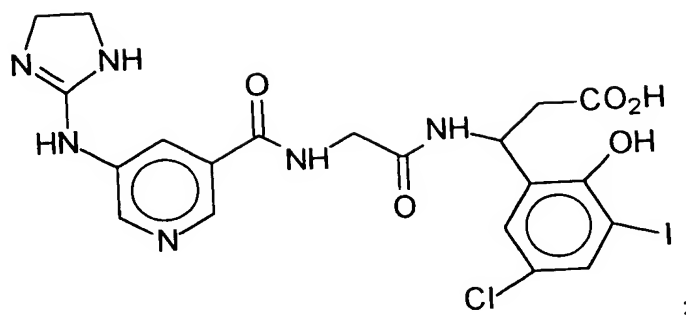


4. A compound according to Claim 1 of the formula

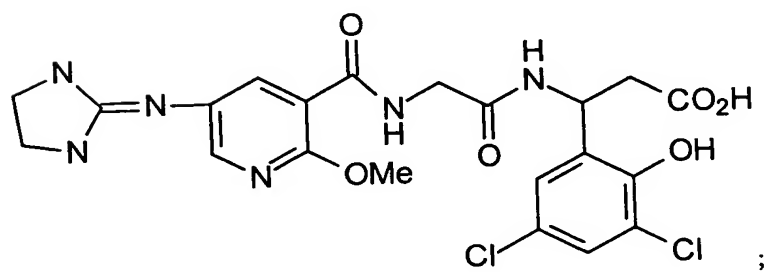
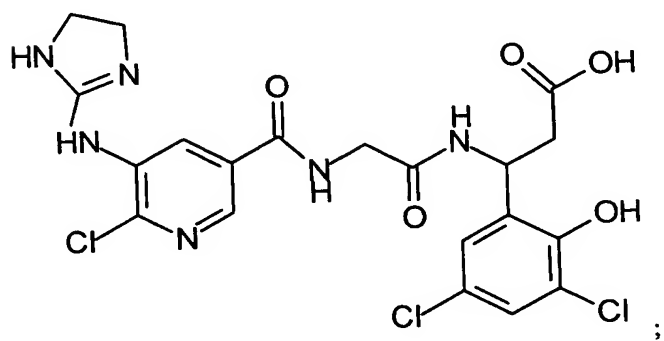
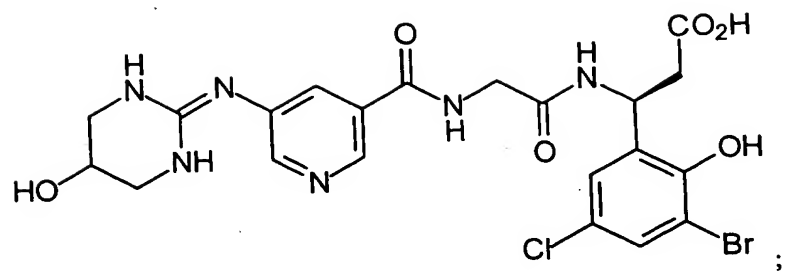


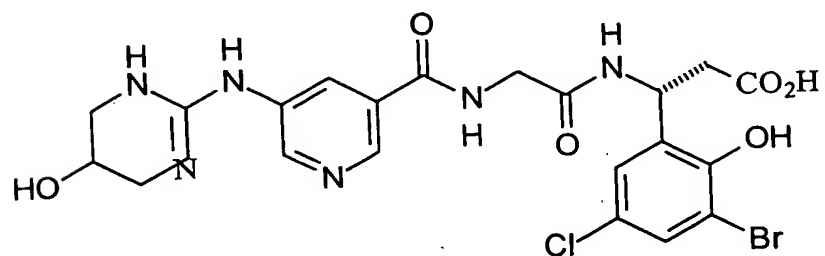
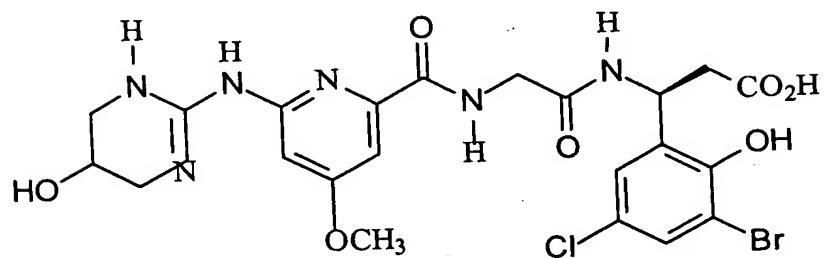
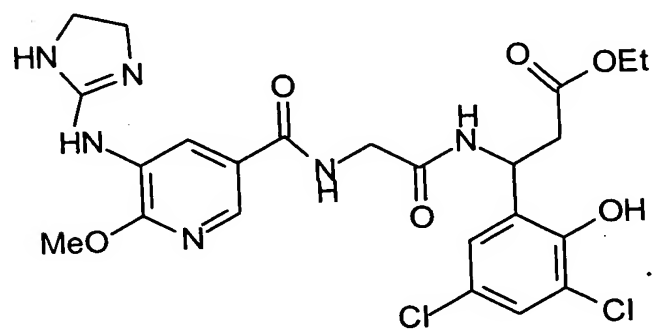
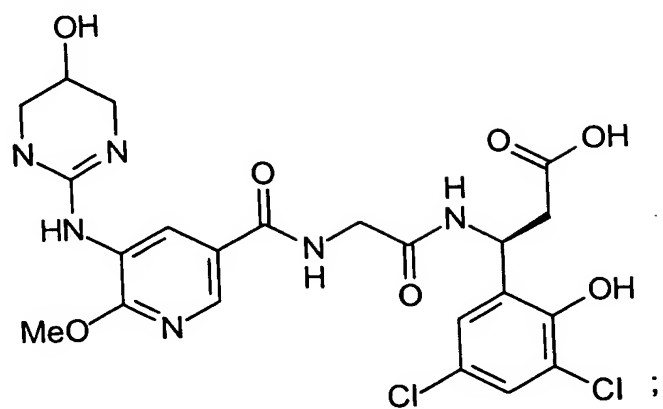
5. A compound according to Claim 4 wherein the compound is selected from the group consisting of

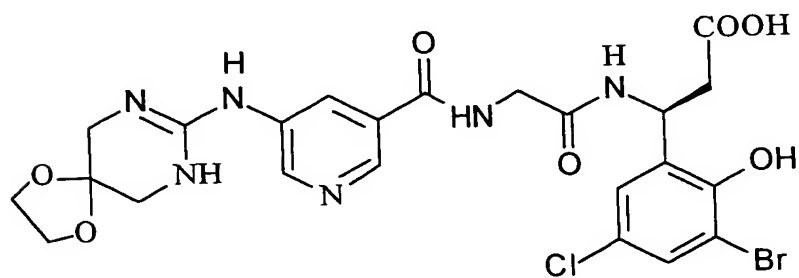
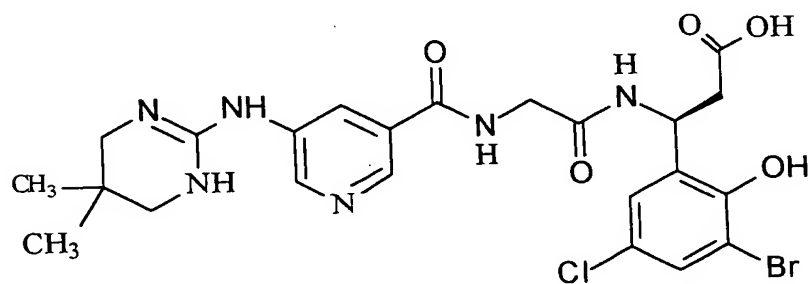
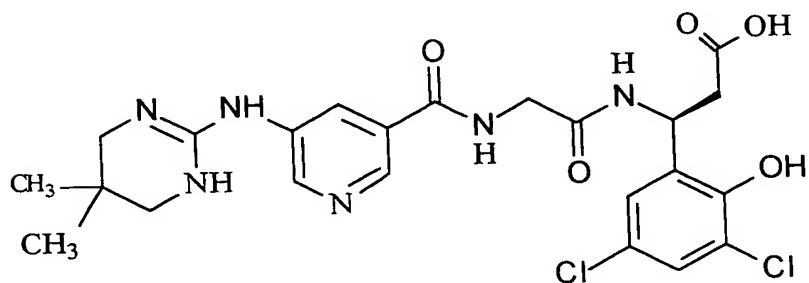
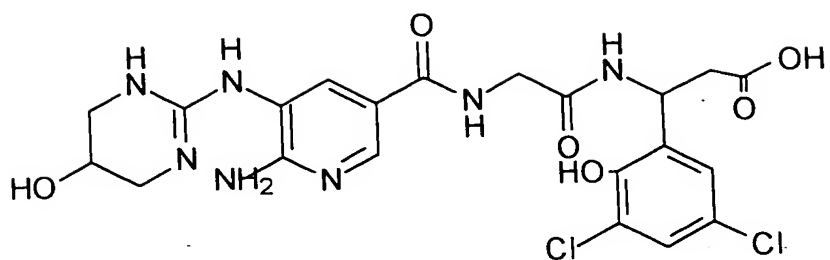


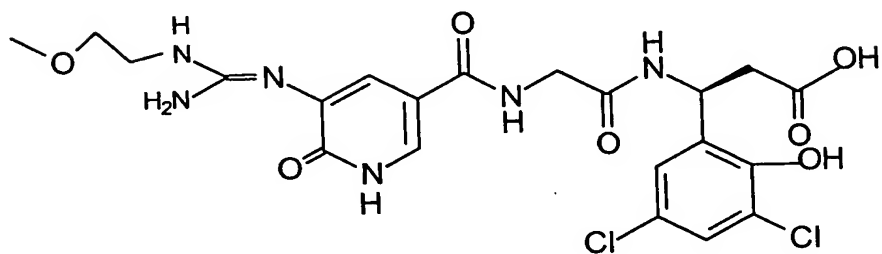
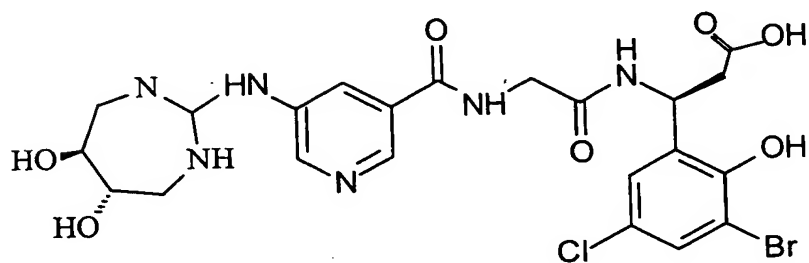
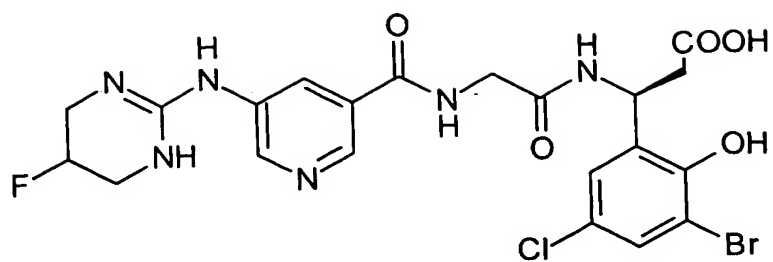




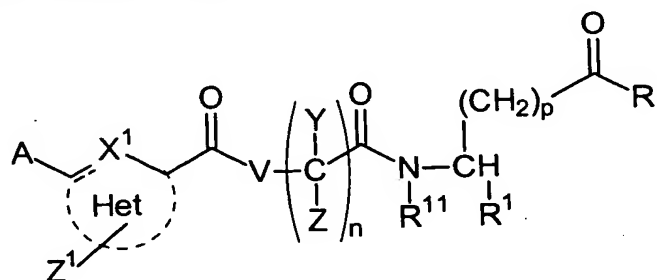




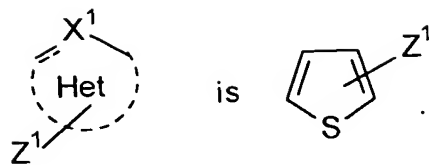




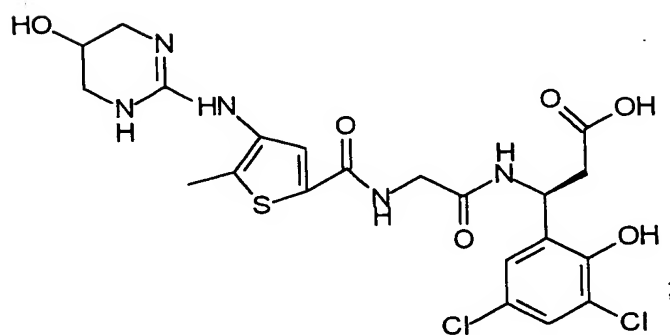
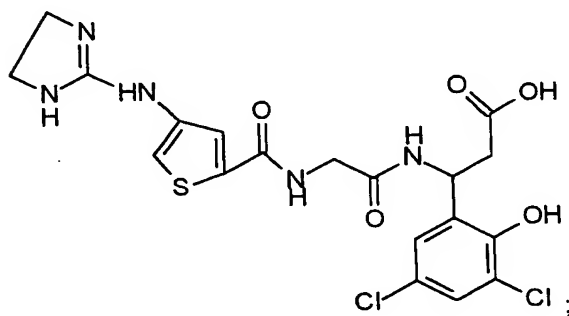
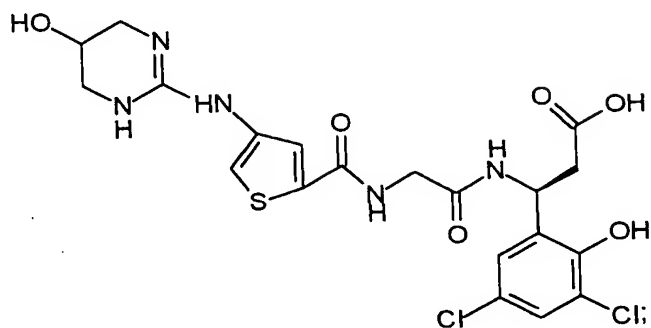
6. A compound according to Claim 1 of the formula

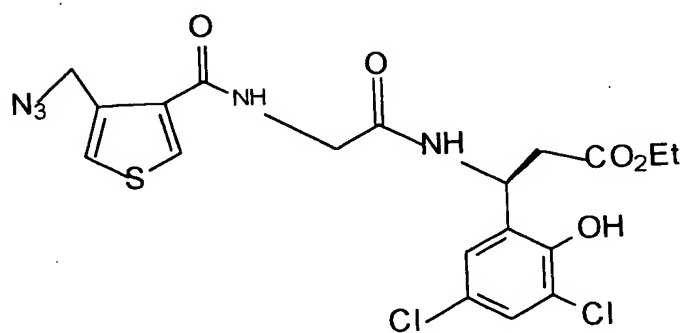
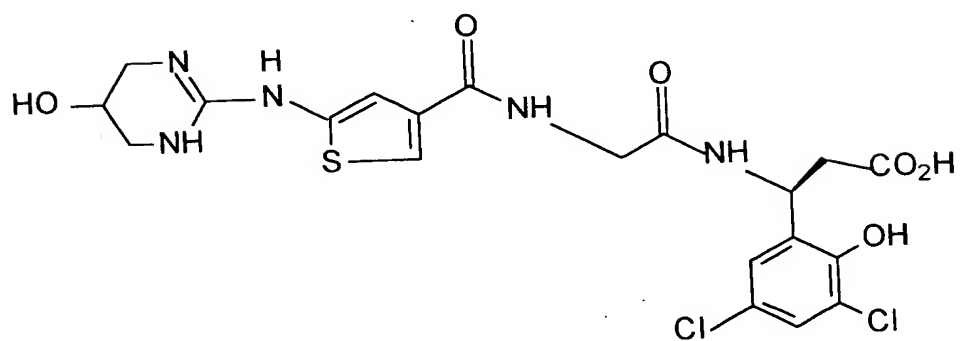
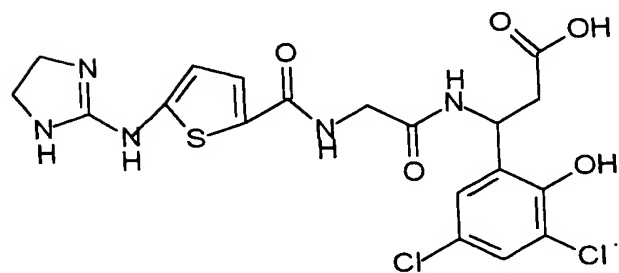
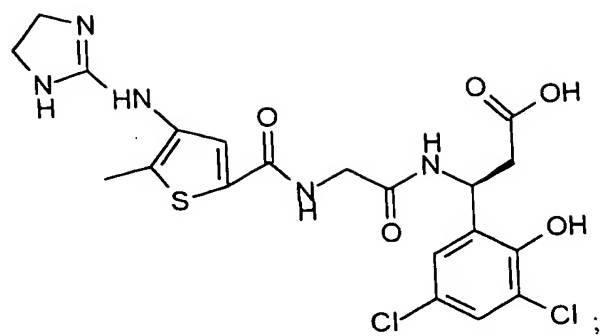


wherein

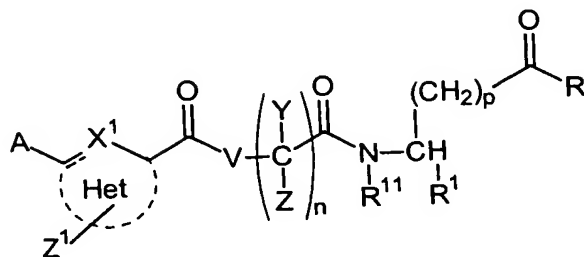


7. A compound according to Claim 6 selected from the group consisting of

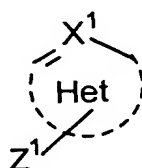




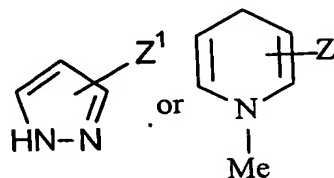
8. A compound according to Claim 1 wherein the compound is of the formula



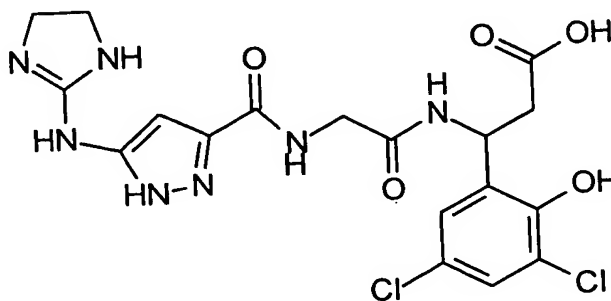
wherein

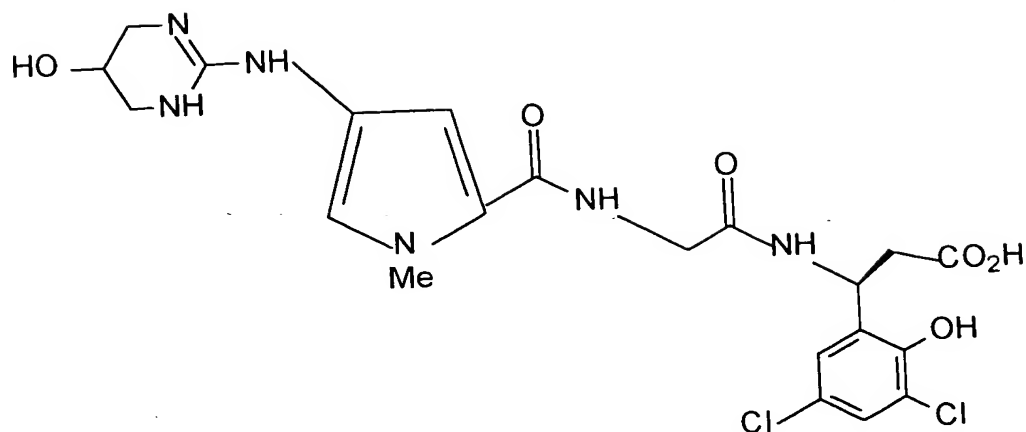


is

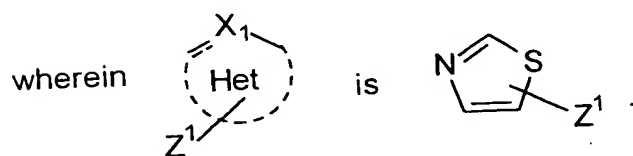
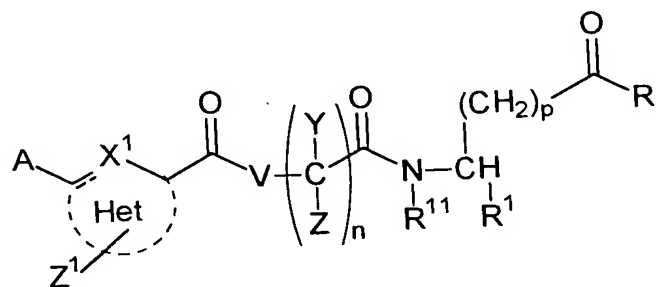


9. A compound according to Claim 8 of the formula

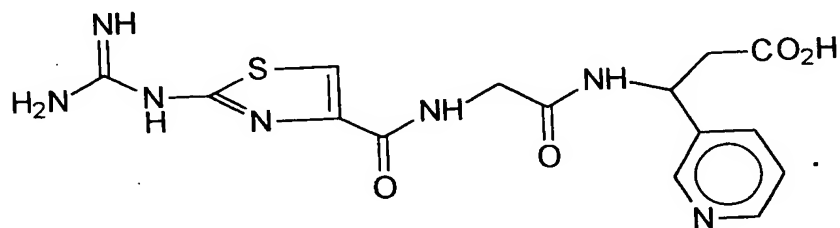




10. A compound according to Claim 1 of the formula



11. A compound according to Claim 10 of the formula



12. A pharmaceutical composition comprising a therapeutically effective amount of a compound according to Claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 or 11 and a pharmaceutically acceptable carrier.



13. A method for treating conditions mediated by the  $\alpha_v\beta_3$  integrin in a mammal in need of such treatment comprising administering a therapeutically effective  $\alpha_v\beta_3$  inhibiting amount of a compound according to Claim 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 or 11.
14. A method according to Claim 13 wherein the condition treated is tumor metastasis.
15. A method according to Claim 13 wherein the condition treated is solid tumor growth.
16. A method according to Claim 13 wherein the condition treated is angiogenesis.
17. A method according to Claim 13 wherein the condition treated is osteoporosis.
18. A method according to Claim 13 wherein the condition treated is humoral hypercalcemia of malignancy.
19. A method according to Claim 13 wherein the condition treated is smooth muscle cell migration.
20. A method according to Claim 13 wherein restenosis is inhibited.
21. A method according to Claim 13 wherein the condition treated is rheumatoid arthritis.
22. A method according to Claim 13 wherein the condition treated is macular degeneration.